DOCUMENT RESUME

ED 328 965 EA 022 661

AUTHOR Hart, Thomas E.; Lumsden, Linda S.
TITLE Demographic Analysis: Using Today's Data To Plan for Tomorrow's Schools.
INSTITUTION Oregon School Study Council, Eugene.
REPORT NO ISSN-0095-6694
PUB DATE Dec 90
NOTE 51p.
AVAILABLE FROM Publication Sales, Oregon School Study Council, University of Oregon, 1787 Agate Street, Eugene, OR 97403 ($6.00 prepaid; $2.00 postage and handling on billed orders; quantity discounts).
PUB TYPE Collected Works - Serials (022)
JOURNAL CIT OSSC Bulletin; v34 n4 Dec 1990

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Cost Effectiveness; Data Analysis; *Demography; Economic Factors; *Educational Planning; *Educational Trends; Elementary Secondary Education; Ethnic Groups; *Futures (of Society); Information Sources; Social Influences
IDENTIFIERS Los Angeles Unified School District CA; Project REACH

ABSTRACT

Careful demographic forecasting provides schools with crucial information they require to plan effectively to meet future needs. The overview of general population trends that begins this document includes a detailed description of factors that influence demographic predictions. Changes in ethnic groups in general and Hispanic, Black, and Asian populations in specific are discussed as well as the location, immigration trends, and birth-rate patterns of minority groups. Economic and social factors that influence students and schools are discussed, including the increasing number of retirees, changes in the "average" family profile, and poverty among children. After describing several sources of demographic data, this document provides information on using and interpreting those data and describes the Los Angeles Unified School District's Forecasting Model as an example. The effectiveness of Project REACH (Respecting Our Ethnic and Cultural Heritage) and interdisciplinary approaches for building community awareness of demographic change and diversity is also discussed. Last, steps involved in conducting a cost-utility analysis are explained, and the implementation of a pilot program, the importance of ongoing monitoring, and collaboration with outside agencies are outlined. A list of urgent educational needs concludes the document. Five tables and three figures are included. (44 references) (CLA)

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DEMOGRAPHIC ANALYSIS

Using Today's Data to Plan for Tomorrow's Schools

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Thomas E. Hart and Linda S. Lumsden

Oregon School Study Council
December 1990 • Volume 34, Number 4

EA 022 661

OSSC BULLETIN

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ISSN 0095-6694
Nonmember price: $6.00
Member price: $4.50
Quantity Discounts:
10-24 copies - 15%
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OREGON SCHOOL STUDY COUNCIL

1787 Agate Street
University of Oregon
Eugene, Oregon 97403
(503) 346-5045
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Preface

A new century is a milestone that symbolizes an opportunity for further development. The coming of the twenty-first century is no exception. The year 2000 has political scientists, economists, and educators using it as a point in time against which to make predictions or propose implementation of new approaches to their disciplines.

Educators are currently attempting to project what the needs of schools will be in the twenty-first century. Plans will be made for these schools of the future, but the plans should be based on the present strengths of the schools and upon the demographic trends that are shaping American society. Beginning with an overview of demographic change that is occurring nationally, Hart and Lumsden proceed to describe how a school district can gather and analyze local demographic data to become more aware of how the community of which they are a part is changing. Knowing what the operant factors in a district are will enable district administrators to better understand how to provide an appropriate education for all students in their district.

Thomas Hart is director of the International School of Panama. He has held a number of chief administrative positions in international and overseas schools. A former OSSC graduate research assistant, Hart received his doctoral degree from the University of Oregon's Division of Educational Policy and Management in 1989. Linda Lumsden is associate editor of OSSC. She has a bachelor's degree in journalism and a master's degree in counseling psychology from the University of Oregon.

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Introduction

Who at one time or another hasn't wished for a look into the future? Whether it is an individual wanting to know how his or her stocks will fare, or a nation wanting to foresee the implications of a foreign policy decision, or a school district wanting to know how to prepare students for careers they will enter ten years later, all have the desire to discover what action should be taken today to achieve a desired outcome in the future.

One way schools can catch a glimpse of things to come is by gathering and analyzing demographic data and monitoring national demographic trends. As the American Association of School Administrators booklet *Planning for Tomorrow's Schools: Problems and Solutions* (Neill 1983) expresses it, "One way to look at the future is to let the numbers speak for themselves."

Webster's dictionary defines *demography* as "the statistical study of the characteristics of human populations, esp. with reference to size and density, growth, distribution, migration and vital statistics and the effect of all these on social and economic conditions." Some specific types of demographic-related information of interest to school leaders are identified by Jerry Herman (1989). They include "information about such matters as age of the adults living in the area, the socioeconomic levels of the community, the educational level of the residents, and the numbers of single parents and retired people living in the school attendance area."

"More than most other public services," state Jeanne E. Griffith and her colleagues (1989), "education is inextricably linked to demographic trends." Indeed, demographic information has a bearing on many areas that are crucial to school districts. For example, educational facilities are constructed or closed on the basis of enrollment, which is determined not only by birth rates but by such things as employment opportunities in a community.

Although other social institutions are touched by demographic trends, the tremors of change are felt by schools long before they rock most other

sectors of society. Because they have less time to prepare for demographic changes than other social institutions, it is especially critical for education leaders to know how to read demographic trends and use the little lead time they have to prepare for anticipated changes. As Eunice and George Grier (1990) state,

> Demographic shifts affect all of society's institutions, but many of these changes tended to hit the schools harder and faster. Your clientele turns up in the schools only a few years after they arrive on this planet, and unlike some other institutions, public schools have to take care of every single child—anticipated or not.

If a district is to be ready for the twenty-first century with appropriate educational programs and resources, it must be aware of national demographic trends before engaging in long-range planning. (See "Long-Range Planning: School Districts Prepare for the Future," *OSSC Bulletin*, January 1988). In addition, before planning for change, sources of local demographic information must be tapped.

This Bulletin presents an overview of demographic trends and shows how schools can benefit from an awareness of demographic data. Chapter 1 surveys some demographic trends that will have a significant effect on schools as they move into the next century. Chapter 2 offers information about how districts can obtain and use local data to map out their own demographic profile. Chapter 3 suggests techniques districts can use to help them prioritize needs and determine the relative effectiveness of proposals. In the conclusion, a "demographic agenda" is presented, in which several areas that will need attention in the coming decade are identified.

Chapter 1

The Changing Complexion of Society

Some demographers acknowledge that demography is not an exact science. Nonetheless, demographic trends can be good indicators of what to expect in the future. David Snyder (1984) reports that demography provides the best long-range accuracy in forecasting, being statistically reliable up to fifteen years into the future. Unfortunately, demographic forecasting is not as straightforward as it may first appear. If, for example, a school superintendent wanted to estimate the size of the first-grade class of 1998, one predictor would be the birth rate during 1992. However, other factors besides the birthrate may be influential. Such things as the migration of families (and industry) into and out of the district, changes in the district's ethnic composition, changing economic conditions, and changes in the profile of the district's "average family" could alter the situation, causing a change in the figures.

Before engaging in long-range planning, school officials should be aware of national demographic trends and also possess an understanding of the unique factors that are operant in their district. While it is valuable for district officials to be cognizant of demographic trends that are occurring on a national level, they must keep in mind that what may be true for the country generally, or even for the county in which they are located, may not necessarily be indicative of what is in store for their district.

This chapter examines some of the general demographic trends that will be occurring in the U.S. Of course, different factors are at work in different areas of the country, and so not all trends will be equally relevant to all districts.

General Population Trends

According to Census Bureau projections quoted by Judith Waldrop (1989), the states of California, Texas, and Florida are expected to absorb over half of the total U.S. population growth between now and the turn of the century. It is anticipated that California will remain the nation's most populous state, while Texas is expected to move into the number two spot as New York descends to third. It is thought that Arizona will be the fastest growing state, its population expected to increase by 23 percent. The Census Bureau predicts that Oregon will gain 110,000 people between 1990 and 2000, which translates into a 4 percent increase.

Elizabeth Larson and Philipp Schrankel (1986) predict an overall decline in the school-age population. They note, "By the end of the year 2000, only 28 percent of the population will be in the age group of 5 to 17; that is down from 32 percent." People from a number of the twenty-one states in the north and central sections of the country are leaving areas where basic industries are in trouble. Larson and Schrankel also see migration to the sunbelt continuing, with young Americans moving "south and west because that is where most new jobs will be created." And Snyder predicts that "long term patterns of migration will generally disperse both population and enterprise out of center cities and into exurbia."

Unfortunately, authorities do not always see eye to eye when it comes to population projections. Take the case of Iowa. The Census Bureau projects that Iowa will lose an average of nearly 21,000 people a year between 1990 and 2000, an 8 percent loss, giving the state a population of 2.55 million by the year 2000. However, local census groups dispute the figures. Whereas the Census Bureau projects a loss of 209,000 residents between 1990 and 2000, Iowa State University projects an increase of 20,000 for the same period. Waldrop says that the National Planning Association in Washington, D.C., projects that in the year 2000 Iowa's population will be slightly greater than the 2.88 million anticipated by state authorities. The Bureau of Economic Analysis anticipates even greater growth and projects 2.97 million Iowans in the year 2000. Furthermore, Woods and Poole Economics, a private forecasting firm in Washington, projects that Iowa will have a population of three million by the turn of the century.

The example above serves to illustrate that district officials should evaluate demographic statistics cautiously. If there is disagreement among government sources about which trends will ultimately prevail, it is probably wise to think of government figures as "best and worst" state scenarios, and then rely on district records and local information-gathering efforts to make projections.

Changes in Ethnic Groups

Obviously, aggregate figures are not the whole story. Knowing that the population in a certain area is likely to increase or decrease is a starting point, but we cannot stop there. It is also critical to know whether there will be significant change in the composition as well as the size of the population in question. For example, although the state of New York has been declining in total population, some ethnic groups are growing while others are shrinking ("Empire State Adjusts to Post-#1 Era" 1988). Non-Hispanic whites make up two-thirds of New York State's population, while 15 percent are black, 14 percent Hispanic, and 4 percent Asian. If present trends continue, however, by the year 2040, Hispanics will outnumber non-Hispanic whites. Today, 40 percent of elementary and secondary school children in the state of New York belong to an ethnic minority. By the year 2000, states William Henry (1990), "the proportion is expected to approach 50%." Similarly, Harold Hodgkinson (1989) predicts that by 2010 52.8 percent of children in New York will be nonwhite.

White students are already a minority in California. Nonwhites comprise 51.3 percent of California's school age population— 31.4 percent Hispanic, 8.9 percent black, and 11 percent Asian and other nonwhite groups. Even when people of all ages are included, whites only make up 58 percent of California's population.

As Joe Schwartz and Thomas Exter (1989) state, "Public schools, especially, will have to meet the educational needs of increasingly diverse students. The states and local areas most blessed with children will be challenged by a profusion of races and cultures." Molefi Asante, chairman of the Department of African-American Studies at Temple University, is quoted by William A. Henry as saying, "Once America was a microcosm of European nationalities. Today, America is a microcosm of the world."

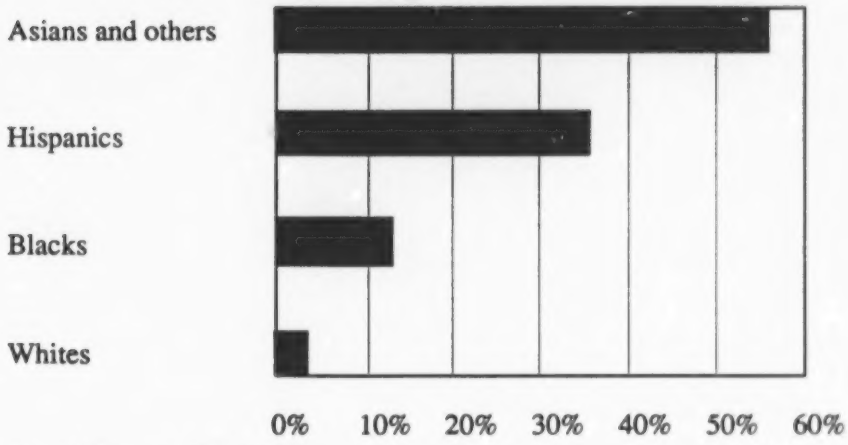
A dramatic example of ethnic diversity is evident in the Los Angeles Unified School District, where, in 1987, 93 different languages were spoken among the students in three high schools. During the 1989 school year, 38 percent of elementary students in the Los Angeles County public schools were enrolled in English as a Second Language (ESL) classes.

Growth of ethnic "minorities" is by no means restricted to New York State and California. Minority populations are comprising a larger proportion of the student population in many districts across the nation. Schwartz and Exter state that by the year 2000, 21 percent of American children will be racial minorities—primarily black or Asian American. If the white Hispanic population under age eighteen is added to black and Asian populations, the minority youth population will be 34 percent by the year 2000. By 2010, they estimate that as many as 38 percent of Americans under the age of

eighteen will belong to minority groups. In seven states and the District of Columbia, more than half of children will be minorities. And in nineteen other states, at least one-quarter of children will be black, Hispanic, Asian, or other minorities.

In the overall population, the rate of growth among whites is not keeping pace with that of other ethnic groups. Figure 1 shows the percent of increase in major ethnic groups between 1980 and 1988.

Figure 1
Percent of Increase in Ethnic Groups (1980-88)



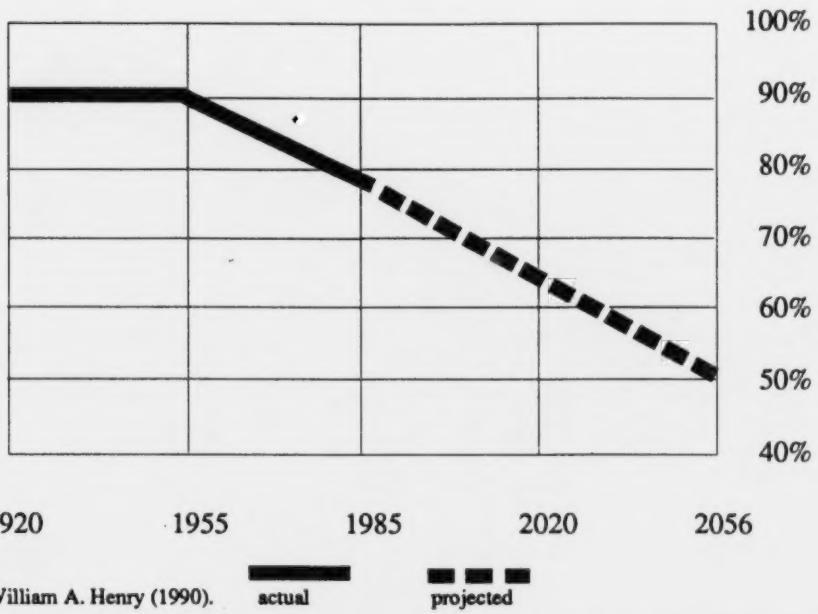
Source: William A. Henry (1990).

Wali Gill (1989) notes that many school districts—especially urban and some suburban ones—are becoming "minority majority" in composition. He states, "Non-white children constitute about one-third of the preschool population, and their number is growing more rapidly than that of white children. By the year 2000, African-American and Hispanic students together are expected to make up one-third of public school enrollments." Some predict that in the general U.S. population non-Hispanic whites may be a minority group by 2056. Based on the assumption that present immigration trends will continue, the graph in figure 2 depicts the projected fall in the white population as a percentage of total U.S. population.

Another look into the future is provided by Henry, who tells us that

> already 1 American in 4 defines himself or herself as Hispanic or nonwhite. If current trends in immigration and birth rates persist, the Hispanic population will have further increased an estimated 21%, the Asian presence about 22%, blacks almost 12% and whites a little

Figure 2
Non-Hispanic Whites as a Percent of Total Population



Source: William A. Henry (1990).

> more than 2% when the 20th century ends. By 2020 . . . the number of U.S. residents who are Hispanic or nonwhite will have more than doubled, to nearly 115 million, while the white population will not be increasing at all. By 2056, when someone born today will be 66 years old, the "average" U.S. resident, as defined by Census statistics, will trace his or her descent to Africa, Asia, the Hispanic world, the Pacific Islands, Arabia—almost anywhere but white Europe.

By 2010, it is predicted that "minorities" will form the majority of children in the District of Columbia (93 percent), New Mexico (77 percent), California (57 percent), Texas (57 percent), New York (53 percent), and Florida (53 percent). Oregon is expected to have a minority youth population of 14.1 percent in 2000 and 16.8 percent in 2010.

Hispanic Population on the Rise

Hispanics are the fastest growing ethnic group in America today. Jaime Raigoza (1988) cites figures showing that the U.S. Hispanic population rose by about 265 percent between 1950 and 1980. *Population Today* ("Hispanic Update" 1987) reports that the Hispanic population grew from 14.6 million at the 1980 census to 18.8 million by March 1987, a 30 percent increase. This rate of growth, fueled by both high immigration and birth rates, is five times that of non-Hispanics. However, this increase is not

evenly distributed among the states. Approximately 80 percent of the Hispanic population resides in nine states, with New Mexico, Texas, California, and Arizona leading the list (Griffith and others).

One implication of this increase, according to the *Population Today* report, is that "as their number and concerns grow, this group will present challenges to U.S. policy makers in nearly every area, but most urgently in education, job training, and welfare." The fact that about "1 in 4 Hispanic families were below the poverty level in 1986 and that overall, their median income was about one-third below that of non-Hispanic families, $19,995 vs. $30,231" ("Hispanic Update") underscores the fact that we must address the needs of the growing Hispanic community.

But, again, overall figures can be misleading. Even within one ethnic group there are often diverse subgroups. Joe Schwartz (1988) speaks about the ethnic and economic diversity of Hispanics. He says 68 percent of all Hispanics are of Mexican origin, 12 percent are from Puerto Rico, 11 percent are from Central and South America, and 5 percent come from Cuba.

Although Cuban Americans may be the smallest and most slowly growing Hispanic ethnic group, they are the most successful. They have the highest median family income of all Hispanic groups—$26,800 in 1985. Schwartz predicts that the Cuban median income "may surpass the national median income in a few years." The reason for this relative affluence may be that many Cubans who immigrated to the U.S. in the1960s were middle-class, educated people who brought money and skills to the U.S. In addition, 17 percent of Cuban Americans aged twenty-five and older have completed four or more years of college (compared to 6 percent of Hispanics of Mexican origin, and 20 percent of the total U.S. population). Another reason Cubans have a higher income is that in 58 percent of Cuban families there are two or more wage earners.

Black Culture Diversifies

Although Hispanics are the most rapidly growing ethnic group in the U.S., changes are also occurring among other groups. The black population is increasing not only because of indigenous birth rate but because of the immigration of blacks from many different regions. John Reid (1986) believes that by the turn of the century 7.7 percent of the black population will be foreign-born individuals and their descendants. He compares challenges that will face the black community to those faced by white Americans at the turn of the twentieth century when millions of southern and eastern Europeans immigrated to the U.S. Ethnic subgroups within the black racial group "will be competing for what little the white power structure offers them."

Time will tell whether the newest immigrants will be assimilated into general black American culture or whether cultural enclaves will develop.

Some think future demographic change will bring with it the onset of a "multicultural" black society. Reid concludes that the outcome depends not only on "the intensity of the demographic behavior, but on the mode that cultural assimilation will take in future years—in the family, community, schools, workplaces, and churches—indeed, in all the social institutions of the black society."

Immigration of Asians Continues

The Asian population in the U.S. is also rising, but, according to Griffith and associates, "the numbers are small relative to blacks and Hispanics." According to Robert Gardner and colleagues (1985), heavy immigration and an influx of over 700,000 Indochinese refugees since the Vietnam War ended in 1975 are responsible for much of the growth in the Asian-American population. The major ethnic groups are Chinese (21 percent of 1985 population), Filipinos (20 percent), Japanese (15 percent), Vietnamese (12 percent), Koreans (11 percent), and Asian Indians (10 percent). The Asian population is both socioeconomically and culturally diverse. In the ten years between 1976 and 1986, enrollment of Asian students in public schools increased from 535,000 to over one million.

In the immediate future, immigration will probably continue to be the most important determinant of the size and composition of the Asian population, although it is possible that this could change if U.S. policy changes or if political and economic circumstances in immigrants' countries of origin change. Looking toward the future, Japanese are likely to decrease proportionately because few people immigrate from Japan and the birth rate among Japanese-Americans is low. The share of Filipinos and Koreans should increase because their immigration levels are high. The greatest increases are expected among the Vietnamese because of both relatively high birth rates and high immigration levels.

Although Asian Americans are heavily concentrated in a few states and tend to live in larger urban centers, there are Asian communities throughout the fifty states. Asians' commitment to education should continue to cause their income levels and occupational status to climb. On the other hand, mainstream American values may influence Asians' values, perhaps eroding their strong emphasis on education and work. As Gardner and colleagues point out,

> In the past, Americanization has involved the absorption of values relating to schooling and work which encourage both individual success and national productivity. But the Americanization of Asian immigrants may have the opposite effect—reducing their exceptionally high level of dedication to learning and work.

School attendance statistics support the notion that Asian-American

families believe in education for their children and are willing to support them while they increase their education-related credentials. Gardner and associates speak of academic success among Asian-Americans:

> Asian Americans are outperforming all other groups in education, the traditional American gateway to success . . . highest average scores of any ethnic group, including whites, on the math section of the Scholastic Aptitude Test for college entrance; nine of the 40 semifinalists in the Westinghouse Science Talent Search among highschoolers in 1984 and seven in 1985; 11 percent of Harvard's entering freshman class in 1984, 9 percent at Princeton . . . . The 1980 census recorded that 35 percent of adults age 25 and older in the six main Asian American groups had graduated from college, more than double the 17 percent of white adults. An amazing 52 percent of adult Asian Indians in the U.S. are college graduates and more than one-third of Chinese and Filipinos. Census figures on high school completion and school enrollment also demonstrate Asian Americans' extraordinary commitment to economic advancement through education.

Part of the reason Asians do so well in school is said to be related to strong parental pressure and support and a high level of discipline among Asian students. Gardner quotes Asia expert John Whitmore of the University of Michigan as saying, "If an American child isn't doing well in school, his parents think the teacher or school has failed or the student just doesn't have it. The Asian parent's view is that the student isn't trying hard enough. Put shoulder to wheel, and there will be payoff."

Despite the fact that some generalizations can be made about particular ethnic groups, individuals who are members of a particular group will not, of course, always exhibit characteristics that may be prevalent within the group as a whole. There are, obviously, rich and poor Chinese, rich and poor Filipinos, and so forth.

Where Minorities Reside

Morton D. Winsberg (1986) reports that the proportion of minorities within the thirty-eight largest Statistical Metropolitan Areas (SMAs)—areas with one million or more inhabitants—increased dramatically between 1960 and 1980. This occurred because of rural-urban migration and migration from overseas. Whereas in 1960 42 percent of the nation's blacks lived within the thirty-eight SMAs, by 1980 the figure had risen to 51 percent. During the same period, the percentage of the nation's Hispanics living in these cities increased from 57 percent to 60 percent and Asians rose from 34 percent to 50 percent.

During the same twenty-year period, the percentage of non-Hispanic whites in these SMAs fell from 84 to 73 percent. In contrast, blacks increased from 11 to 15 percent, Asians from 1 to 3 percent, and Hispanics

from 2 to 10 percent. In conjunction with these figures are those showing that the central part of these metropolitan areas lost population to the suburbs, especially in the case of non-Hispanic whites. This has resulted in increased geographic segregation, "with non-Hispanic whites concentrating in the suburbs and the minorities concentrating in the central cities."

A breakdown of public school enrollment during 1986 by race or ethnic group for each of the fifty states is presented in table 1. As one can see, there is tremendous variation in the size and proportion of minority enrollment among the states.

Immigration Trends

As mentioned earlier, recent increases in the U.S. population have been due in large part to immigration. Hodgkinson notes, "It may well be that regardless of race, our middle class is not reproducing itself. Currently, without our 16 million immigrants, our population would not have expanded much at all since 1980."

James Allen and Eugene Turner (1988) report that during the 1980s legal immigration averaged 570,000 people a year, and hundreds of thousands of aliens with nonimmigrant status live legally in the United States. Added to that are "probably between 2.5 and 3.5 million illegal aliens here."

Just considering legal immigrants, Mexico contributes about 60,000 a year; the Philippines about 46,000; and together, China, Taiwan, and Hong Kong contribute about 45,000 annually. The next largest groups are Koreans and Vietnamese, with an annual average of nearly 35,000 immigrants each, and Asian Indians and Dominicans averaging about 25,000 each. Approximately 10,000 persons each year come from Jamaica, Cuba, Iran, Cambodia, the United Kingdom, Laos, the Arab countries, Canada, and Columbia. One needn't be an expert demographer to recognize that the vast majority of new immigrants are from Asian and Hispanic populations.

Where do the immigrants settle? Nearly 90 percent reside in only twenty of the fifty U.S. states. The five states receiving the largest share are (in order of settlement) California, New York, Texas, Florida, and New Jersey. "Chain migration," in which citizens of a country settle in a particular area and are followed by others who need the help of the earlier immigrants in adjusting to a new culture, results in fairly stable settlement patterns. Among professionals who are fluent in English, the phenomena of chain migration is not as widespread—provided immigrants have the fortitude to pursue opportunities without the social support of a familiar ethnic community. Chinese, Indians, Koreans, Iranians, Europeans, and Canadians who come to the U.S. tend to be more evenly distributed among the fifty states.

Almost 90 percent of immigrants choose to live in metropolitan areas,

Table 1
State Enrollment in Public Elementary and Secondary Schools by Race/Ethnic Group, 1986

	1986 Enrollment (in thousands)	*Total %*	*% White Non-Hispanic*	*% Black*	*% Hispanic*	*% Asian & Pacific Islander*	*% American Indian/ Alaskan Native*
United States	39,837	100	70	16	10	3	1
Alabama	734	100	62	37	z	z	1
Alaska	108	100	66	4	2	3	25
Arizona	535	100	62	4	26	1	6
Arkansas	437	100	75	24	z	1	z
California	4,378	100	54	9	28	9	1
Colorado	558	100	79	5	14	2	1
Connecticut	469	100	77	12	9	2	z
Delaware	94	100	68	28	3	1	z
Dist. of Columbia	86	100	4	91	4	1	z
Florida	1,607	100	65	24	10	1	z
Georgia	1,096	100	61	38	1	1	z
Hawaii	165	100	24	2	2	72	z
Idaho	208	100	93	0	5	1	1
Illinois	1,825	100	70	19	9	2	z
Indiana	967	100	89	9	2	1	z
Iowa	481	100	95	3	1	1	z
Kansas	416	100	86	8	4	2	1
Kentucky	643	100	89	10	z	1	z
Louisiana	795	100	57	41	1	1	z
Maine	212	100	98	1	z	1	z
Maryland	676	100	60	35	2	3	z
Massachusetts	834	100	84	7	6	3	z
Michigan	1,682	100	76	20	2	1	1
Minnesota	711	100	94	2	1	2	2
Mississippi	499	100	44	56	z	z	z
Missouri	801	100	83	15	1	1	z
Montana	153	100	93	0	1	1	6
Nebraska	267	100	91	4	2	1	1
Nevada	161	100	77	10	8	3	2
New Hampshire	164	100	98	1	1	1	z
New Jersey	1,107	100	69	17	11	3	z
New Mexico	282	100	43	2	45	1	9
New York	2,608	100	68	17	12	3	z
North Carolina	1,085	100	68	29	z	1	2
North Dakota	119	100	92	1	1	1	5
Ohio	1,794	100	83	15	1	1	z
Oklahoma	593	100	79	8	2	1	11
Oregon	449	100	90	2	4	2	2
Pennsylvania	1,674	100	84	13	2	1	z
Rhode Island	134	100	88	6	4	2	z
South Carolina	612	100	55	45	z	1	z
South Dakota	125	100	91	1	1	1	8
Tennessee	818	100	77	23	z	1	z
Texas	3,210	100	51	14	33	2	z
Utah	416	100	94	z	3	2	2
Vermont	92	100	98	z	z	1	1
Virginia	975	100	73	24	1	3	z
Washington	761	100	85	4	4	5	2
West Virginia	352	100	96	4	z	z	z
Wisconsin	768	100	87	9	2	2	1
Wyoming	101	100	91	1	6	1	2

z=less than 0.5 percent
Source: Jeanne E. Griffith and others (1989).

and New York City tops the list of immigrant destinations. The largest numbers come to New York from the Dominican Republic, followed by Jamaica, then, collectively, China, Taiwan, and Hong Kong. Los Angeles-Long Beach is the second most popular destination among immigrants (58,000 between 1984 and 1986), with Mexicans, Filipinos, and Koreans being the leading groups to settle in this area. Chicago is third, with 20,000 people from Mexico, India, and the Philippines. Other leading "magnets" are Miami, San Francisco, Anaheim, San Jose, Oakland, San Diego, Washington D.C., and Houston.

Interestingly, immigrants do not always settle in a city that is similar to their country of origin. For example, a large number of Koreans list Baltimore and the Bergen-Passaic area in New Jersey as their intended site of settlement; among Cambodians, Boston and Atlanta are popular destinations. There has even been a decline in the number of new Laotian immigrants who choose to settle in Honolulu, Seattle, and Portland.

Regional census departments can supply school districts with figures related to population shifts. For example, figures collected by Allen and Turner for Portland, Oregon, indicate that between 1984 and 1986 the city received an average of 2,832 immigrants per year (ranking it twenty-third among the nation's cities for receiving immigrants). These came from Vietnam (592), Korea (274), Laos (217), China, Taiwan, Hong Kong (200), Cambodia (194), Philippines (167), Iran (119), Mexico (109), and other Hispanic nations (Dominican Republic, Jamaica, Cuba, Colombia, El Salvador, and Guyana) supplying a total of 47. Indian immigrants numbered 75. Other Oregon cities may be undergoing similar ethnic change or may draw a different mix of ethnic groups, due to variables such as economic factors. Since many people choose to migrate to areas where their job-related skills are in demand, economic conditions are often pivotal in immigrants' decisions about where to settle.

Birth-Rate Patterns

In addition to immigration patterns, birth-rate patterns are also having an important impact on our society. On the whole, birth rates have been falling among women of all major racial groups. The drop is most pronounced among middle-class women.

Among some low-income families, however, a different pattern is emerging. Hodgkinson refers to it as the "short-cycle family":

> Short-cycle families are those which produce a new child every 14 years or so. In Los Angeles last year, I met a 28 year-old *grandmother*. (She had a 14 year-old daughter who had just given birth.) I asked the grandmother how old her mother was when she was born, and she indicated 14 again. Thus, there is, in Los Angeles, a 42 year-

> old *great grandmother*. (No fathers were living with any of the mothers.) This was a white family, in poverty. As middle-class families of whatever race cut back on their birth rates, we find this new form of poverty family that goes through a "generation" every 14 years.

Although it is not known exactly how many so-called short-cycle families exist in the U.S., when combined with falling birth rates among other groups of women, he contends that the trend is having a definite impact on our society and the well-being of its members.

Summary

Often those who propose changes for the educational systems of the future only take into account the implications of total numbers of students, disregarding the composition of that total. When we consider that by the year 2000 some states will have "a majority of minorities in the population" (Larson and Schrankel), it becomes clear that it is not in anyone's best interest to ignore ethnic changes in the population.

Failing to consider the specific kinds of changes that are occurring in populations has a cost. It can result in educational programs that are so irrelevant to the students they serve that many students may underachieve, become disruptive, or drop out of school. It is meaningless to refer to programs that serve the "average child" without addressing the question "Average for what group and by what criteria?" And no matter what the curriculum content is, if students have difficulty understanding the material because of language barriers, content becomes irrelevant. On the other hand, if, for example, administrators gather information that indicates the percentage of non-English-speaking children in their district will increase, they will be able to make appropriate arrangements, such as hiring personnel to teach these students English.

Economic Influences

In addition to changes in the ethnic distribution of a population, economic trends also directly affect schools and the students moving through them. By looking at local birth rates, school districts can obtain fairly accurate projections for the a few years. However, to try to predict enrollment ten or fifteen years into the future requires that economic trends be considered. As Louis Colombo and his associates (1990) state,

> An upsurge in the local economy could bring new families into your schools over the next decade. An economic downturn could send enrollment plummeting. Yet most district forecasting models fail to anticipate the effect that economic trends—as well as many other

Table 2
Anticipated Job Growth, 1987-2000

Metropolitan Area	*Percent*	*Number*
Anaheim-Santa Ana	+46	616
Orlando	+39	215
Fort Lauderdale	+38	216
San Jose	+36	349
Phoenix	+34	347
Dallas	+31	472
	Subtotal (6 areas):	2,215
U.S. Total:	+16	20,700

Source: Harold Hodgkinson (1989).

demographic changes—have on enrollment far into the future.

The relevance of economic factors to changes in population size is also emphasized by Hodgkinson. He notes that, "to a considerable extent, we can predict population growth based upon job growth, especially in a society of working couples." Table 2 indicates some of the cities where an increase in jobs is anticipated.

Preparing Students for the Future

Economic trends also have an effect on the needs of currently enrolled students. Schools must be attuned to the skills students will need to assume a productive role in society after graduation. Many authors believe that more highly skilled workers will be needed in the future. *Workforce 2000* (William B. Johnston and others 1987), for example, predicts that future jobs will require more technical knowledge and higher levels of literacy.

Society's need for skilled workers has direct implications for school programs. Labor market realities will have significant implications for education. The economic success of a community is dependent in large part on the presence or absence of a skilled work force. A number of state initiatives to improve the quality of public education have been spawned in part by a rising tide of complaints from the business community and the nation's colleges and universities over the declining abilities of high school graduates, and by the desire of communities to attract high-tech industry with the lure of a highly skilled work force.

Griffith and her associates cite U.S. Department of Labor figures that predict approximately 30 percent of new jobs in the 1990s will require a college degree, up from 22 percent at the end of the 1980s. In addition, jobs that high school dropouts will be qualified for are expected to decline from

18 percent to 13 percent. But even now, states Snyder, most employers complain that half or more of current high school graduates do not even possess basic skills such as spelling, grammar, and arithmetic. As the need for skilled workers increases, there will be increasing pressure from employers to improve the quality of public schooling or to provide a more effective mechanism for producing a large pool of competent, skilled workers.

At present there is a surplus of midcareer workers, whereas the number of new entry-level workers entering the work force will fall during the next two decades. A smaller pool of people entering the work force means that the productivity of workers must increase. This decline in new entrants may also result in increased competition, and perhaps higher wages, for the services of entry-level workers.

Areas of the country that produce a high percentage of skilled workers will be more apt to remain economically healthy. As Snyder states:

> A growing number of business and political leaders echo the sentiments of Harvard economist Lester Thurow, that "it is not possible to build a high-tech economy with low-tech components," and that the most important component of our economy—the workforce—must therefore be upgraded. . . . The availability of quality technical and professional personnel, and of skilled rank-and-file workers, are far-and-away the most important criteria for the selection of new plant site locations by high-tech industries.

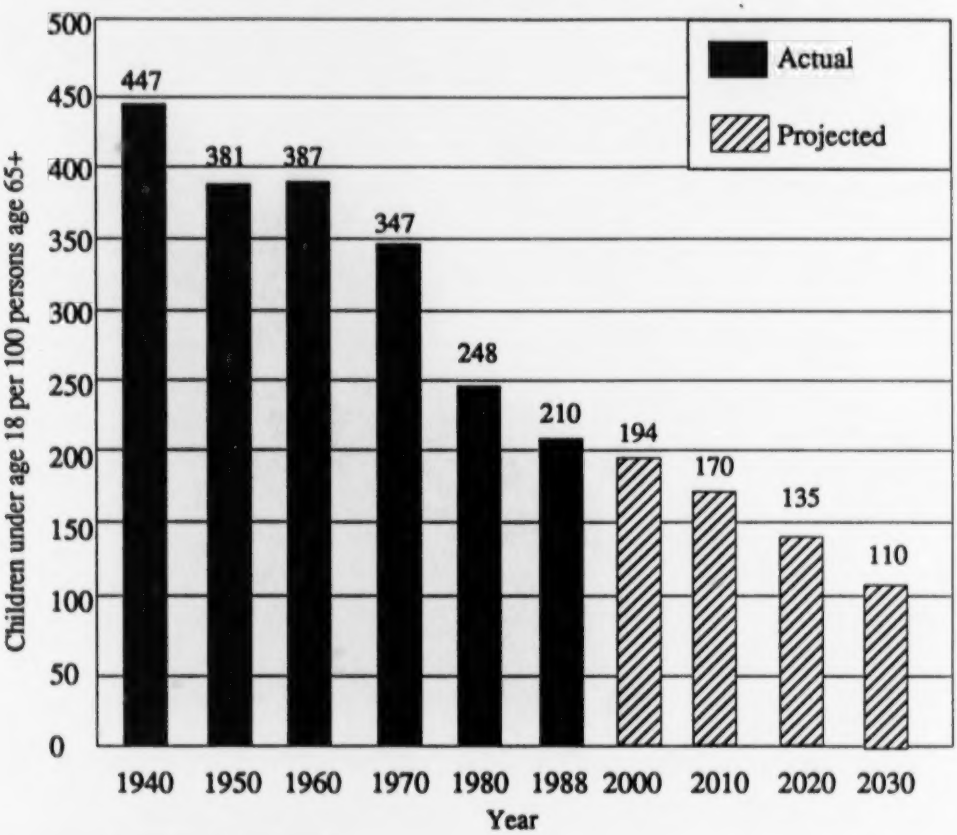
Besides a drop in the number of new workers, the composition of the work force will change. According to Griffith and colleagues, "Immigrants and native-born minorities will make up about 40 percent of the entry-level workers in the coming decades. Thus, the national call to increase the basic achievement of minority students has a solid economic justification."

A Growing Number of Retirees

By the middle of the twenty-first century, there will be more retirees (a large majority of whom will be white) in the population and a dwindling number of workers (the majority being nonwhite) who must be taxed to pay for the older population's Social Security benefits. The size of the elderly population in relation to the population of young people is depicted in figure 3.

In a 1982 commentary on the need for programs to train predominantly black and Hispanic street-youth for productive employment, the National Alliance for Business stated, "If you look at the demographics a decade out, it is clear that we will be doing all of this out of economic necessity rather than out of any moral concern" (Snyder). Robert B. Hill, former research director for the National Urban League, has warned, "If America wants its Social Security checks to keep being paid in coming years, it had

Figure 3
Ratio of Children to the Elderly, 1940-1988, and Projections to 2030



Source: Suzanne Bianchi (1990).

better ensure full opportunity and productivity for minorities and women" (Snyder).

Another effect of the rising proportion of elderly in the population is that older people will, in many cases, be competing directly with education and the needs of children for the allocation of public funds. The rise in the elderly population, and in childless households generally, may also result in an erosion of financial support for schools through property tax increases.

According to Suzanne Bianchi (1990), "the economic situation of children has worsened relative to the elderly." Like other authors, she expresses concern that the growth of the elderly "may undermine the political viability of child-related public expenditures as the needs of the elderly compete with education and child care for a shrinking pool of public funds."

The Need for a Flexible Work Force

In the future, it will also be important for workers to possess sufficient basic skills to be able to successfully undergo job retraining. During the course of their work lives, it is expected that a large proportion of workers will change jobs or careers several times.

A related economic challenge society will face will be the need to reintegrate skilled blue collar, technical, and professional employees who will lose their jobs (Snyder). A portion of these job losses will occur among middle-management personnel, who are expected to lose their jobs as businesses consolidate management responsibilities into fewer levels.

Social Factors

In addition to ethnic and economic change, change in the social fabric of our country has implications for schools. Trends that reflect changes in the characteristics of children and families, which Griffith and associates predict will intensify during the 1990s, include

- Increases in the minority share of the school-age population.
- Increases in the percentage of children living in poverty.
- Increases in the percentage of children who live in single-parent families for some or all of their childhood.
- Growth in the percentage of children born to unwed mothers—particularly in minority populations.
- Growth in the number of children whose mothers work outside the home. The American home environment is changing. The extended family has virtually disappeared, and even in the nuclear family often both parents work or a child lives with a single parent who must work.

The Middle-Class Family as Minority

In terms of income earned, *Population Today* ("A Species in Danger or Evolution?" April 1988) cites data showing that since 1970 "families earning between $20,000 and $50,000 in constant dollars have shrunk by 6.7 percentage points of the total." And whereas in 1955 the average forty-year-old male could anticipate a rise of 27 percent in his income during the next ten years, today the average male of forty feels fortunate to keep pace with inflation.

More two-parent households are finding it necessary for both parents to be employed to furnish the family with its essential needs. This means that parents are less available to participate in school activities held during

the day and may even be too tired from a day at work to join evening school-related activities. For similar reasons, they are less likely to express their ideas concerning school policies at evening board meetings and to be aware of their children's academic progress or to help them with their homework.

Children in Poverty

About 15.3 million children live with one parent. Over 90 percent of the time, that parent is the mother (Hodgkinson). Another 1.9 million children do not live with either parent. And children make up 40 percent of America's poor. Table 3 shows the percentages of children in single-parent families by race for the year 1988. "In 1988," states Griffith and associates, "45 percent of the families with children headed by a woman were living in poverty, compared to only about 7 percent of married-couple families with children."

A high divorce rate, combined with fertility rates that are declining more rapidly among married women than single women, have caused the proportion of children living with one parent to grow. In addition, as a proportion of total births that occur among teens, births to unmarried teens have increased in recent decades, according to Griffith and colleagues.

Whereas the average income for married couples with children is $36,206, the average income for female households with children is $11,299, or about $1,000 above the poverty line. Educators must be conscious of the circumstances in which many children of single mothers live. The limited financial resources and the difficulties involved in trying to raise children alone create stress for both single mothers and their children.

Table 3
American Children in Single-Parent Families by Race, 1988

	Total		*White*		*Black*		*Hispanic**	
	Number (millions)	Percent	Number (millions)	Percent	Number (millions)	Percent	Number (millions)	Percent
Total children under 18	63.2	100.0	51.0	100.0	9.7	100.0	6.8	100.0
Living with:								
Two parents	45.9	72.7	40.3	78.9	3.7	38.6	4.5	66.3
One parent	15.3	24.3	9.6	18.9	5.2	54.1	2.0	30.2
Mother only	13.5	21.4	8.2	16.0	5.0	51.1	1.8	27.2
Father only	1.8	2.9	1.5	2.9	0.3	3.0	0.2	3.0
Other Arrangements	1.9	3.0	1.1	2.2	0.7	7.4	0.2	3.6

*Hispanics may be of any race.

Source: Jeanne Griffith and others (1989).

Twenty-three percent of all young children (age 0-5) are living in households that fall below the poverty line. As these children enter school, the fact that they live in a state of poverty interferes with their ability to learn and affects other aspects of their well being. As Hodgkinson notes, "We can be quite sure that they are hungry quite often, that their mothers are not with them in the afternoon, and that there is no place in their housing that can be set aside for studying purposes."

The type of housing that many single mothers are able to afford may have insufficient space for family members. For example, Hodgkinson states that a "child's 'room' is likely to be a convertible sofa in the living room, including the television, the phone and other distractions, right next to a busy, noisy kitchen." In many cases the housing that low income mothers can afford is on the outskirts of town, where rents tend to be lower. This often means that a mother's commute to work as well as her child's journey to school are long and often complicated. It also makes her ability to stay in close communication with teachers and other school personnel difficult. If one's only source of transportation is the public bus system, it may take an inordinate amount of time and effort to attend parent conferences and other school-related events.

Overall, single parents spend an average of 58 percent of their income on housing; among young single parents, an average of 81 percent of household income is spent on housing (Hodgkinson). Because housing costs eat up such a large portion of a family's income, any unexpected expenses, such as car repairs, can push these families into homelessness.

As the number of single-parent families and two-income families continues to grow, schools will feel a number of effects. One of those relates to support services and the need for extracurricular activities. As more parents are at work when students are let out of school at the end of the day, should schools be obliged to provide activities for them until later in the evening? If this isn't done, students who are unsupervised may fail to go home, or may go home but fail to do their homework without the prompting of parents.

Other needs that may accompany the rise in single-parent families are, according to Herman, "the need for parenting classes through community education, the need to provide additional counseling for students who do not have the traditional nuclear family to rely upon, or the need to develop additional after-school activities for students. It may also indicate that the school may anticipate and plan for a reduction in adult volunteers."

Summary

This chapter has presented a brief overview of some current ethnic,

economic, and social trends at work in the United States. When school administrators are aware of which factors affect their communities and to what extent, they can then mobilize the expertise to formulate plans to accommodate future needs. Sources from which school administrators can obtain local demographic data are identified in the following chapter, and ways of analyzing such data are described.

Chapter 2

Collecting and Analyzing Data

When planning for the future, it is valuable for administrators to attempt to uncover patterns that were instrumental in shaping the district's present demographic situation. This information can then be used to assist in predicting future patterns. (See *OSSC Bulletin* "Long-Range Planning: School Districts Prepare for the Future," January 1988.) To engage in this kind of "dynamic" approach to planning, school leaders begin with a "snapshot" profile that captures information that is true about the district at a given point in time and then probe more deeply, asking questions such as "How did this come about?" "When did this start?" "What are the apparent trends?" "What effect, if any, has this had on district educational policy, test scores, support services needed, school climate, and so forth?" "Where will this likely lead to in the future?" "What are the future implications of this trend?"

The Need for Specific Data

Since information about population trends is essential for preparing annual budgets and determining future facilities needs, most districts have developed procedures that provide them with reliable estimates of the total number of students who will be enrolled in kindergarten, elementary school, middle school, and high school during the next several years. This information helps school officials to anticipate the amount of funding and the number of classrooms and teachers that will be needed in the foreseeable future.

Unfortunately, aggregate data of this kind do not help school officials to address a number of other issues, such as What kinds of teachers will be needed? What specific programs will these teachers be required to implement? What support services must be provided if the students are to have the opportunity to succeed? To answer questions of this nature, district planners

will need to collect more specific data about ethnic and socioeconomic characteristics of future cohorts of students. They will also need to determine the proportion of incoming students for whom English will not be their native language.

Failure to obtain adequate data about the composition of increasing or declining enrollment can result in serious problems. For example, if data on district birth records or transient population trends indicate that two more classes of students can be expected in the lowest grade level, then the board prepares to hire an additional teacher or two and makes sure there is space for the anticipated students. If the data show that the additional children will be from homes where English may be poorly understood (or not understood at all), then unless the new teacher is trained in ESL, he or she is in for a real challenge, and the students will experience frustration and begin to fall behind in their schoolwork unless the language barrier is addressed immediately.

It is important for district planners to determine the degree of data specificity they will need. For example, is it enough to know that of the additional students 37 percent will be Asian and 42 percent Hispanic? Or, keeping in mind the differences among ethnic subgroups, would it be important to find out that 37 percent "Asian" really means approximately 12 percent Chinese, 10 percent Korean, 8 percent Japanese, and 7 percent Cambodian, or that 42 percent Hispanic is really 35 percent Mexican-Americans, 5 percent Cuban, and 2 percent other Latin American nationals?

In addition, how increases or decreases in the student population are distributed across the grade levels also influences the kind of impact they will have. In the example, two additional classes might translate into fifty students. But if the influx is not restricted to one grade level but distributed among several grades, and if the anticipated increase is not fifty but multiples of fifty, then the problem increases in complexity.

Sources of Data

According to Thomas E. Glass (1987), many administrators are unaware of the vast amount of demographic data that is available to them. He also contends that uncertainty exists regarding how to use such data. Acknowledging that computerized statistical packages have a place in assisting in short-range projections of five years or less, Glass cautions that they are not a substitute for gathering and analyzing available demographic data.

He identifies a number of sources of demographic data, described below.

Census Data

Federal census data can be a valuable resource to educational planners. For all statistical metropolitan areas (SMAs), block and tract data are available. Similar data are usually available for less populated areas. Census data can provide information about

- the age distribution
- number of single parent households
- number of children per household and their ages
- racial and ethnic composition
- income levels
- how long residents have lived in their present homes
- where the children in the household are attending school (parochial, etc.)
- type of employment
- religious affiliation (Glass)

This kind of information can give districts a good overview of a population. The data can then lead to conclusions about the population's likelihood of producing children who will attend district schools. By examining census data, one might discover that a neighborhood is aging and that a gradual decline in enrollment is likely. A high proportion of single-parent households may be predictive of a high rate of mobility. The type of employment prevalent in a district may also affect whether a population tends to be stable or transient. And in-migration of people who have a particular religious affiliation that is associated with large family size may indicate future enrollment gains. Finally, declining income from one census to the next might indicate a neighborhood that is in decline, perhaps foretelling an increase in lower income families who, on average, have a greater number of children.

County Planning Departments

To receive guidance about collection and analysis of census data, Glass suggests visiting the county planning department, since county planners are skilled in obtaining and using census data. Information useful to school districts that is available from most county planning offices includes zoning information on land use and development proposals. In addition, county planners make general population projections that can be useful to school administrators.

Building Permits

Districts can also find out how many building permits were issued by county or city offices during a given year. Building permit figures may be looked at as a very rough indicator of declining or increasing economic activity in a given area, but it is important not to confuse building permits with new housing units. While permits are issued for the construction of houses, they are also issued for additions to houses, swimming pools, and so forth. Therefore, it is useful for district planners to find out what proportion of building permits were issued for the construction of new homes. If the number of permits given for new home construction is high, this might indicate future growth in enrollment for the district.

Assessed property values can also be useful when they are combined with income levels of neighborhoods obtained from census data, because in some cases out-migration can be prompted by high property taxes.

District Surveys

Useful information can also be gleaned from district surveys designed to collect demographic information or to discover residents' feelings about how well the district is meeting their needs. In addition to updating census data, it is a way for district officials to let citizens know that their input is desired and will be considered when decisions about the district are made.

Health Departments

Data on the number of live births among district residents can usually be obtained from county health departments. If the health department has computerized records, it can use master lists of streets and addresses within district boundaries to produce these data. In many cases, health departments can also provide districts with abortion-related information. Statistics on family size can also be provided, as well as information about immunization records, which can be used to estimate the number of future kindergarten students. Mortality tables may also be useful to districts, for high mortality rates may precede in-migration of families with children.

Commercial Surveys and Projections

For a variety of reasons, large businesses, economic development agencies, and organizations such as the local Chamber of Commerce often survey local community members or conduct studies on a regular basis. Some of this information may be valuable to school districts. For example, before a site for a new plant is selected, research is usually done to get information about the labor force, the type of housing, the schools, and so forth.

Utility Companies

Telephone, electric, and natural gas companies may also be sources from which districts can obtain information, since they conduct comprehensive surveys of present and future use in their service areas. Population surveys are used to estimate the number of hookups that will be needed in each section of a city or county during a given ten-year period. Some utility companies like to keep these survey results confidential, however.

If districts are able to obtain information on projections made by utilities, they should find out the method by which the companies arrived at the figures. In making calculations, utilities sometimes use satellite photographs of their service area, which they enlarge to get a visual picture of each parcel of land in the area. School districts can acquire photographs of this sort from the U.S. Air Force. These photos are sometimes used by suburban districts that want to estimate the potential for growth in their area.

Using Demographic Data

Demographic information collected from some of the sources above can be classified as "soft" data. According to Glass, "it has a limited amount of validity but is still important enough to seriously analyze and consider in decision making." He suggests first classifying the sources of data according to their degree of usefulness. He states, "some type of weighting scheme needs to be developed in order to rank order the demographic data sources in terms of the accuracy to project into the future." A rating scale from 1 to 5 might be assigned to various types of data according to their predictive value.

When using the data to predict enrollment, the effort should be viewed as a "best guess." Glass suggests that an initial overview of the data can be obtained by preparing a matrix that displays the data source, indicates whether growth or decline is indicated, evaluates special impact of growth or decline (such as a high proportion of non-English speaking youngsters moving into the district), and rates the relative accuracy of the data.

A sample matrix in table 4 has been constructed for the hypothetical Happy Hollow School District. In this sample matrix, a potential for growth is evident, which will most likely produce additional enrollment, probably in the lower grades. The students will come from higher income homes, and the number of new students may be significant enough to warrant considering the construction of new or remodeled facilities. This tool can be used to give more or less weight to cohort projections based on historical enrollments, thereby assisting leaders in making a best guess about future enrollment changes in the district.

Table 4
Happy Hollow School District
Enrollment Probability Matrix, 1985-1990

Data Source Analyzed

	Weighted factor for growth	Weighted factor for decrease	Probable percent of growth/loss enrollment	Special loss/ growth characteristics, impact	Assessment of subjectivity of assessment accuracy	Overall importance	Totals	Comments, decisions
Cohort Survival Method	+3	NA	.2%	None	+4	+4	+3.5	Good Validity
County Vital Statistics	+2	NA	1.5%	Lower Grade Growth	+4	+4	+3.5	Very Valid
Preschool Census Projection	+4	NA	4.5%/K-1	Rapid Growth	+4	+4	+4.0	4% Growth
Linear Regression Projection	+3	NA	2.0%	None	+4	+4	+3.8	
Live Birth Projection	+2	NA	4.5%/K-1	None	+3	+3.5	+3.5	
Zoning/Platting	+1	NA	1.0%	High Income	+2	+1.5	+1.25	
Building Permits	+1	NA	1.0%	High Income	+1	+1	+1	
Federal Census	+4	NA	2.5%	Lower Grades	+3	+3.75	+3.5	Lower Grades
Utility Company Survey	+2	NA	1.0%	NA	+2	+2	+2.0	
Commercial Surveys/Data	+2	NA	1.0%	NA	+2	+2	+2.0	
County Comprehensive Plan	+2	NA	2.0%	Lower Grades	+2	+2	+2.0	
District Survey	+4	NA	3.0%	Lower Grades	+4	+4	+4.0	Very Valid

Source: Thomas E. Glass (1987).

Los Angeles Unified School District's Forecasting Model

During the past decade, the Los Angeles Unified School District, the second largest in the U.S., has undergone dramatic changes in both the number and the ethnic composition of its student population. Due to international migration, combined with relatively high birth rates of certain ethnic populations, the population of LAUSD is now an ethnic majority, made up primarily of Hispanics. According to Milan Mueller and Deborah Rackerby (1989), the growth has been geographically concentrated, with a large number of students residing in areas where existing facilities are already

overburdened. In response, the district has begun year-round schooling as a short-term solution.

To understand more fully the demographic changes that are contributing to its diversity, LAUSD hired consultants to analyze and quantify the tremendous changes that have occurred. The district contracted with GeoBased Systems to produce an enrollment projection model designed to "tie together the demographic changes that are occurring in Los Angeles County to expected future LAUSD enrollment based on a set of assumptions regarding fertility, mortality and migration for each of the four ethnic groups." By considering distinctive fertility and migration patterns of each ethnic group as well as considering the propensity for students to enroll in LAUSD schools, the model is able to generate enrollment projections with enough geographic specificity to detect shifts in residential patterns.

The consultants devised a methodology that incorporated existing student enrollment data for each school (by grade and racial/ethnic background) with census tract population estimates and forecasts (by year for ages five through seventeen and racial/ethnic category). The data used in the projections came from two sources: the district and the Los Angeles County Department of Health Services.

The Department of Health Services used the Population Estimation and Projection System (PEPS) to produce population projections based on a cohort survival model. PEPS is unique in that it incorporates local demographic patterns, utilizing information on fertility rates of different racial/ethnic groups by census tract. Such data make PEPS sensitive to variance in fertility patterns of ethnic subgroups and to their spatial distribution within the district. Migration taking place at the census tract level is also taken into account, enabling PEPS to produce projections that not only reflect the entry of people into the district as a whole but also take into account demographic changes resulting from the highly mobile populations that reside in specific neighborhoods.

Before applying projection procedures, the student enrollment data and population data had to be aggregated at the same geographic scale, the school attendance boundary level. Once the school-age population within each attendance area was calculated, researchers computed participation rates for each grade and racial/ethnic category. This enabled researchers to identify differences in student participation for all grade levels and racial/ethnic groups throughout the district.

Participation rates by school and grade ethnicity were multiplied by the corresponding single-year school-age population projections for a particular school boundary area to obtain projected student enrollment by grade ethnicity and school. Mueller and Rackerby explain,

> For example, if the participation rate for Asian fifth-graders at School A was 75% and the projected 1990 population of Asian 10-year-olds for School A was 100, then the projected 1990 fifth-grade Asian enrollment at School A would be (.75) x (100) or 75.

One advantage of the student participation rate methodology is that it allows users to manipulate the data using hypothetical scenarios. This is important, since federal regulation of international immigration could dramatically alter the flow of immigrants into Southern California. Another attractive feature of the methodology is that it gives administrators valuable information about the relative success of various groups of students. Declining student participation rates among a group are indicative of an increasing dropout rate. The information can shed some light on the success or failure of the district's current academic policies or curriculum standards and guide the school board in addressing student needs. Mueller and Rackerby offer a hypothetical situation to show how student participation data can highlight student needs:

> For example, the student participation data for Hispanics show a low participation rate at the high-school level, particularly in the eleventh and twelfth grades. This information can be used by the District to evaluate its role in trying to increase the graduation rate among Hispanics.

The model described above has allowed the Los Angeles Unified School District to prepare more fully for imbalances in terms of the geographic distribution of students and the location of schools within the district.

Interpreting Data on Ethnic Changes

Data concerning minority groups may seem to clearly indicate a particular course of action. But before school officials act, they should involve those directly affected—the minority populations. Some well-intentioned district leaders may believe that they know what minorities need, but they must recognize they are outsiders, and might be perceived as part of the problem. This is pointed out by Lisa Delpit (1988), who quotes a black female teacher in a multicultural urban elementary school. The teacher relates her experience working with white staff members to better organize reading instruction for students of color:

> When you're talking to White people they still want it to be their way. You can try to talk to them and give them examples, but they're so headstrong, they think they know what's best for *everybody*, for *everybody's* children. They won't listen. White folks are going to do what they want to do *anyway*.

When administrators want to know how to meet the educational needs of a particular minority group, it is prudent to seek input from members of that group. School leaders might invite representative members to meet with the board and the district administration to express their expectations and concerns. This meeting may require interpreters, but the effort will be appreciated and will probably increase the support among those who will be affected by the programs that are eventually developed.

James VanSciver (1989) describes how the Lake Forest School District in Harrington, Delaware, held a meeting with members of the black community to discuss their perceptions of the school district's effectiveness in meeting their needs. Although some staff members did not like the fact that the meeting was restricted to black community members, the administration believed that hearing the black community's concerns about the school system could only be achieved within such an environment. Following this initial meeting, another meeting was held that was open to anyone who wished to participate.

Initial data gathering and analysis, combined with input from minority representatives, provides districts with a solid foundation from which to proceed to the next step—presenting the information to constituents.

Educating Constituents about Demographic Change

Guided by their data and input from ethnic groups, districts can begin to formulate a plan for restructuring their educational programs to meet the needs of a changing student population. First, however, it is necessary to foster community support for the restructuring effort. If citizens are not well informed about the demographic changes taking place in their community, they may not be convinced that restructuring is necessary. Local residents may not be aware of changes taking place in local schools, particularly if they live in a neighborhood that has not changed much, or if they have not had any children in district schools for several years. Others may be aware that the district's demographics are changing, but believe that because the system has worked for generations to meet the needs of the community it will continue to do so without significant modifications.

For all these people, demographic change must be shown to be relevant to their lives and to the progress of their community. If a citizen is merely told that the education the district provides is no longer relevant to the needs of the students, he might intellectually agree that something should be done. But when the person goes to a local grocery and finds that he cannot communicate with the salesperson because of a language barrier, he may be more strongly in favor of such things as ESL programs.

Project REACH Celebrates Ethnic Diversity

One method of increasing cultural awareness among district residents is to apply principles stressed within a program such as Project REACH (Respecting Our Ethnic and Cultural Heritage). The primary purpose of the project is to help students appreciate ethnic diversity and learn to live within a culturally pluralistic world. Through an organized program of developing cultural awareness, building human relations skills, and sharing cross-cultural experiences, students begin to value the cultural differences that are represented in today's society.

A cultural fair is held at the end of the Project REACH program. For the fair, students create a project related to their heritage, such as ethnic background, family history, family hobbies, ancestors, migration patterns, or any other aspect of their background that they are interested in investigating and willing to share with others. All student projects are displayed at one site, enabling local citizens to view students' creations. Schools also add cultural entertainment, food booths, or arts and crafts displays. Not only does the fair give students the time to get in touch with their own cultural backgrounds, it also helps them come to value the cultural heritage of others.

Because a program such as Project REACH generates family involvement, parents with children in the schools will probably be aware of what their children are researching and also help to provide information and possibly artifacts about family history. The net result of family involvement in the project is that the whole district becomes more aware of the diversity present within its boundaries. Students also tend to become interested in what other students and their families are doing for the fair. Their enthusiasm and curiosity can help the district at large to gain greater awareness of its composition. With media coverage, the message can be communicated to even more people (Project REACH is described in greater detail in the May 1989 *OSSC Bulletin* "Confronting Racism in the Schools.")

An Interdisciplinary Approach Builds Awareness

If an interdisciplinary approach is used to increase awareness, social studies classes could participate in Project REACH while English classes conduct research on different businesses in the area, thereby gaining practice conducting interviews, gathering data, and writing reports. A teacher could instruct students to discover what businesses or industries are prominent in the district and when they were established. Older firms could then be compared with newer establishments to obtain a rough estimate of how many new enterprises were started, which old ones disappeared, and whether there was a pattern in the changes (for example, fewer people in fishing or timber, more in services and high-tech manufacturing). Students with an interest in

computers might then take the cultural and the economic data and make some profiles of which groups are found in what industries. They might even try projecting future patterns.

The findings of the professional data-gathering team could be tied in with the student projects. Projections of the future demographic profile of the district made by these professionals could also be presented at this time. This could be followed up at the next public board meeting with a report of the district's current and future needs.

After increasing citizen awareness of the district's cultural diversity, what remains to be done is for the district to develop a plan of action that should produce the necessary changes in curriculum or staff that will be able to meet the needs of its present and future students.

Developing a List of District Priorities

With the support of the community behind it, the school board should begin to prioritize district needs on the basis of present and anticipated demographic changes. The initial step in establishing priorities might consist of a brainstorming session or use of the Delphi technique.

The Delphi Technique Aids Planning

Application of the Delphi technique to an educational setting is an effective, time-intensive approach to long-range planning (see January 1988 *OSSC Bulletin*). This process entails conducting a series of surveys of the various constituencies to determine what they believe the goals or priorities of the district should be in academic, support, cultural, or other areas. The result should be a list of suggestions for improving the district. Although the process may result in prioritizing the initiatives, district officials should keep in mind that the results could be skewed due to the persuasive powers of a particular group or because some members were unable to participate in the process.

During this stage it is important to involve as many of the groups represented in the district as possible. Without diverse input, the board may end up legislating change for the entire district in accord with its own culturally biased perspective. At this point, districts also must determine what is feasible for them to attempt to accomplish. Priorities may be put forth by interested parties that are beyond the district's sphere of influence but that it could recommend to appropriate agencies or institutions. The following hypothetical example shows how a district can set priorities and then translate them into specific plans.

District Responds to Growing Hispanic Population

Let's say that a district is aware that it has a growing Hispanic population from diverse groups (Mexicans, Cubans, Dominicans, and so forth). The district decides that something must be done to help these students become more fully integrated into the school system and have a better command of English than they presently do after two years of schooling. Once this priority is set, specific suggestions on how to meet this need can be discussed and analyzed. For example, an ESL (English as a Second Language) specialist could be hired. An American culture course taught in Spanish could be introduced. A bilingual psychologist could be hired to help students make the psychological and cultural adjustments necessary. Special classes could be conducted for the adult members of this group. Teachers could be hired who have specific training in cross-cultural interaction or who are Hispanic.

Once suggestions are presented, the district must determine which of the proposals to adopt and implement. This is the most difficult part of the process because of limited resources and because of the psychological impact that any decision will have when, inevitably, some groups will feel neglected.

Although each district might have its own effective way of arriving at a decision regarding possible plans of action, constructing a grid like the one in table 5 may help decision-makers to compare alternative needs visually.

Table 5
Rating Grid for Various Operant Factors

Quantitative Relationships	*School Enrollments*			*District Social Environment*			*Other Factors*		
	Total	Minorities	Percent Minority	SES	Median Income	Hi-Tech	A	B	C
Increasing	2	4	3		1	2		3	
Stable				X					
Decreasing							2		4

First, the primary operant factors at work in the district are listed along the top of the table, and along the side relationships are quantified as increasing, stable, or decreasing. Then in each of the boxes, the factors are rated on

a numerical scale of 1 to 4, with 1 indicating a slight change, and 4 representing a great change. (This scale has "cardinal" properties; that is, two points represent exactly half of what four points represent). If further analysis of a particular factor is needed, then a secondary grid can be constructed in similar manner (for example, for a further breakdown of distinct minority groups).

A cursory glance reveals a moderate increase in the school population, but that increase might be made up entirely of minority students, and the percentage of minorities is increasing rapidly. The socioeconomic status of the district's population is stable, with moderate gains in income and some influx of hi-tech industries. The implication could be that the district should make establishing programs for minorities a priority and perhaps postpone acquiring additional computers. Of course, if funds were plentiful, both needs could be addressed.

For example, if factor "B" was federal funding for educational programs, then more district money could be diverted from programs covered by federal funding and be channeled into other areas. If factor "A" was the available natural resources (timber, fertile land, minerals, and so forth), then a decrease in these resources should signal district funding for programs that would prepare students to enter emerging hi-tech industries. If factor "C" was enrollment in private schools in the district, then the district might anticipate the closure of some private schools because they would be out of the financial reach of more people. If that were to happen, a further increase in public school enrollment might occur, and additional facilities might have to be acquired.

After having conducted this preliminary analysis, the board will have to prioritize programs to be implemented. Once the decision has been made, district administrators can work out the final details.

Teacher Training Programs Must Address Cultural Diversity

The focus of this Bulletin is on what *districts* can do to promote cultural sensitivity and prepare for demographic changes. However, it is important to at least mention in passing that, in general, teacher education programs do not provide teacher trainees with the knowledge or experience to deal with cultures other than their own. Although teacher trainees are required to have strong academic majors, a grounding in professional education, and the obligation to continue to develop professionally, not much attention is paid to increasing trainees' level of cultural awareness. Much of today's teacher preparation relates to the cognitive domain, but this doesn't adequately prepare trainees to step into culturally diverse classroom environments that reflect demographic changes.

Even though districts do not have the ability to reform teacher training programs, they can enhance cultural appreciation among students and staff members. After reaching consensus about district priorities, their next task is to decide which of these should be dealt with immediately and what level of commitment in terms of time, money, and resources can be allocated. This is the subject of the next chapter.

Chapter 3

Assessing Proposals for Meeting Future Needs

Before deciding which plans to adopt to address future needs, administrators must determine whether proposals are cost effective. If various proposals for addressing demographic change have been put forth, then the district may want to conduct a cost-utility analysis, as described by Henry M. Levin (1983). He defines *cost-utility analysis* as "the evaluation of alternatives according to a comparison of their costs and the estimated utility or value of their outcomes." This method is particularly useful when subjective assessments must be made about the nature and probability of educational outcomes as well as their relative values.

Conducting a Cost-Utility Analysis

Three steps are involved in a cost-utility analysis. The first step—a search of the literature and networking with other districts that have attempted some initiatives—should provide a general sense of the efficacy of a particular initiative. The initiative might be aimed at increasing test scores, decreasing absenteeism or dropout rates, lowering the incidence of racial conflicts, or achieving any other goal that the district has determined it should pursue.

If there are no formal data available, then an "educated guess" might be used to provide an initial figure. For example, it might be estimated that by introducing a mandatory guidance or cultural awareness course to all seventh-grade students, there is a 0.7 probability that the district will experience fewer racial incidents. Or, it might be estimated that by introducing a more comprehensive Spanish language and culture program, there is a 0.6 probability that the dropout rate among Hispanic students would decline. Of

course, having hard data is preferable, but in its absence, an initial "guesstimate" may be used for considering a proposal.

The second step is to have individuals (for example, representative members of administration, teaching staff, and various ethnic groups) rate particular programs or initiatives using a numeric scale. The scores represent each person's opinion of the value (utility) of the particular program. Having all groups represented will provide more reliable data. For example, introducing the cultural awareness course might appear to be a good idea, but if some constituencies know that the person designated as the instructor is antagonistic to their particular group, then they may assign a low numeric value to this initiative (perhaps rating it a 3 on a scale of 1 to 10). But because they know that the Spanish teacher has a gift for generating enthusiasm in students for the subject, they may give this program a high rating, such as an 8. Levin points out that it is important for the participants in this exercise to realize that this scale has "cardinal" properties; for example, two points of utility represent exactly half the utility that four points represent.

The third step in cost-utility analysis is to calculate the expected utility associated with each strategy. In the case presented above, one would multiply the determined probabilities of the initiatives by the utility placed on the initiatives. For the cultural awareness course, $0.8 \times 3 = 2.4$, and for the Spanish culture course, $0.6 \times 8 = 4.8$.

Finally, costs are estimated for the programs, and these costs are divided by the expected utilities to obtain cost-utility ratios for each alternative. Thus, if it would cost $2,500 for the culture course and $3,000 for the Spanish course, then their cost-utility ratios would be $1,042 and $625, respectively. The second program has a lower cost-utility ratio, meaning that the cost of a given level of utility is lower if this program is used. On this basis, the decision-makers would choose this as the more desirable option.

The entire process can be summarized by this equation:

$$\text{Cost utility} = \frac{\text{cost of the program}}{(\text{probability of effectiveness}) \times (\text{utility of the program})}$$

Various programs could be considered together as a package and contrasted with other packages. The only difference in the calculation process is that the cost of the entire package is then divided by the sum of all the component programs' expected utility. This composite approach was used by David E. Hawley and others (1986) in relation to the issue of whether to introduce microcomputer-assisted instruction for mathematics. The process could be used for considering the opinions of all the participating constituents by averaging the average utility values of each group and then multiplying this figure by the probability to obtain the expected utility.

If the process appears to be very subjective, we must remember that it is supposed to be. We are attempting to guide the district into a future that people within the district may envision differently. When given the opportunity to express their views, minority groups may give a district the opportunity to create an effective pilot project for the future.

Implementing a Pilot Program

Once a program is decided upon to meet a particular need, it can be pilot tested. Special characteristics of pilot programs or temporary systems that make them effective tools for change are identified by E. Mark Hanson (1985): they are time-limited, they exist in isolation from the permanent system, self-examination is possible for the participants in a setting where the "old rules" do not apply, role experimentation is possible, status equalization is present, and norms are established for completing the task rather than supporting a hierarchical framework. An ongoing system of monitoring, evaluation, and feedback should be instituted to determine if the program is meeting its objectives and to ascertain what modifications might be made to increase its effectiveness.

Ongoing Feedback and Evaluation

Once programs are implemented, they generally cannot be left to operate independently of some system of checks and balances. When priorities are established, goals and timelines should be approved by policy makers, planners, and practitioners. Criteria must also be established to determine the effectiveness of the program.

Ongoing monitoring can usually be done internally, especially in the initial stages of implementation. If the program is established as a pilot project, it may be evaluated after a year, modified, and then perhaps renewed in its revised form the following year. However, when a program runs from one year to the next without major revisions, it may be advisable to arrange for a consultant from outside the district to conduct an evaluation of what the district is doing. Major universities have on staff, or can refer districts to, qualified, experienced individual evaluators or evaluation teams.

Although there is a cost involved in utilizing external expertise, an experienced evaluator will be far more perceptive and objective when assessing how well the program is meeting its intended objectives. An outside evaluator will not have a personal investment in the program and, therefore, if necessary, will probably feel free to question the philosophy that drives the program. And if the program is needed but was poorly designed or imple-

mented, an outsider will not hesitate to say so. In other words, the evaluator comes in, does the job, presents the report, and leaves the district to act upon it or disregard it. The evaluator does not remain in the district or have to interact with those whose performance or concepts are on the line. Conversely, if the board believes that the evaluation was poorly done, it can criticize the evaluator without having to worry about the political or social fallout.

The evaluator's report should guide the district. Information provided by the evaluator may lead the district to leave the initial program untouched or let it continue with modifications. It might signal, in addition, that other priorities can now be acted on. Or it might indicate that new needs have arisen and a new analysis must be conducted to decide upon other priorities. It might mean that the initial program, and perhaps even the entire philosophy upon which the program rests, may need to be substantially revised or even discarded.

Each new year will bring with it new demographic data. These trends should then be the basis of continual adaptation and renewal of the district's policies and practices. The future can be well planned for when districts devote their energy and resources to understanding present and anticipated demographic changes.

Collaboration with Outside Agencies

In some instances, the needs of student populations will not be confined to school-related problems. Hodgkinson emphasizes how difficulties in one area frequently have an impact on other areas of one's life. "It is painfully clear that a hungry, sick or homeless child is by definition a poor learner, yet schools usually have no linkage to health or housing organizations outside those run by the schools themselves." Since needs are often interrelated, it makes common sense as well as fiscal sense for agencies serving different needs of the same clients to be working together.

In *The Same Client: The Demographics of Education and Service Delivery Systems,* Hodgkinson stresses the importance of various social agencies working in concert to meet the needs of students and their families. "While it is useful for educators at various levels to communicate," states Hodgkinson, "it is no longer enough for the urgent problems we face." He emphasizes that different types of service providers must act in concert, all viewing the client as the hub. If service providers were to work collaboratively with one another, the needs of the people they serve would be apt to be met in more effective, creative, and humane ways. The focus of organizations that provide human services such as education, health care, housing, and transportation must be on those they serve, not on maintaining the existing bureaucracy.

Conclusion

Minority groups in the U.S. are growing and in some places rapidly approaching majority status. The proportion of children living in single-parent families is also growing. Another related change is that a greater proportion of children are growing up in poverty. Birth rates are falling. The number of retirees is increasing. And jobs are becoming more technical. These are just a few of the trends mentioned in this Bulletin.

In looking to the future, we should adapt ourselves and our educational system to the world around us, rather than trying to justify an archaic system that is under attack on both popular and governmental fronts as being irrelevant to students' and society's needs. Educational reforms must be introduced that will not only generate productive members of society, but also produce students who think critically about and analyze the society in which they live and work. Effective reforms must embody a demographic perspective.

It is essential that all segments of a district's constituency support district restructuring efforts. With a greater awareness of the needs of different ethnic groups, effective, informed decisions can be made. If a cost-utility analysis is conducted, it is imperative that there be adequate representation from all groups.

Whatever action a district takes, it should ensure that all groups represented in the district believe that the system is adequately meeting their needs. If any one group is responsible for pushing through recommendations, there may be a short-term gain for that group, but this approach may also reap ill will among other groups. Any action should be coordinated so that plans for improvements are based on valid input from state-level authorities, community members, students, and parents.

In the past, the educational system's lack of responsiveness to cultural diversity has played a largely unacknowledged role in placing the nation at risk. Hodgkinson contends that the past decade of school reform has failed to attend to the implications of demographic change. Based on demographic

trends, he identifies the following as urgent educational needs:

- Focusing attention on the improvement of our "bottom third" of students
- Reducing youth poverty, currently 40 percent of all poor
- Preparing at-risk children for school by mandating Head Start type programs for all eligible children
- Getting more young people to graduate from high school and college
- Enlarging the talent pool of high achieving minority and poverty children
- Developing programs for youth who are at risk from several causes simultaneously—school failure, drugs, pregnancy, and arrests

At the close of the next decade, may the record show that schools, working hand in hand with social service agencies, have made progress in addressing needs brought about by demographic change.

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